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Barnes & Thornburg P O Box 2786 Chicago, IL 60690-2786			DUONG, FRANK	
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14.

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/276,080

Applicant(s)

PURSE, CHRISTOPHER MICHAEL

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,8 and 10-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is a response to the amendment dated 08/08/2003. Claims 1-5, 7-8 and 10-21 are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Martin et al (USP 6,298,038) (hereinafter "Martin").

Regarding **claim 10**, in according to FIG. 6 and col. 9, line 23 to col. 15, line 19, Martin shows a transparent demultiplexer (50) comprising:

an input for receiving a supercarrier signal (OC-192) transported using a first protocol (*optical*);

a plurality of outputs (81-84) for transmitting a plurality of trib signals (STS-48s) using a second protocol (*electrical*);

means for demultiplexing (85) said supercarrier signal (OC-192) into said trib signals (STS-48s); and

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means for extracting (80, 86, 88 and 90) messaging information (TOH), required to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol (optical), from the supercarrier signal (OC-192) and inserting (80) said messaging information (TOH) into the trib signals (STS-48s) (*see col. 12, line 62 to col. 13, line 22*).

Regarding **claim 11**, in according to FIG. 6 and col. 9, line 23 to col. 15, line 19, Martin shows a transparent multiplexer (40) comprising:

an output (71) for transmitting a supercarrier signal (OC-192) using a first protocol (optical);

a plurality of inputs (61-64) for receiving a plurality of trib signals (STS-48s) transported using a second protocol (electrical);

means for multiplexing (65) said trib signals (STS-48s) into said supercarrier signals (OC-192); and

means for extracting (60) messaging information (TOH) from the trib signals (STS-48s) and using (66) said messaging information (TOH) to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol (electrical) (*see col. 9, line 41 to col. 11, line 60*).

Regarding **claim 12**, in according to FIG. 6 and col. 9, line 23 to col. 15, line 19, Martin shows a network span (40, 30 and 50) comprising a plurality of low bit rate network sections (51-58), the network span having a first end (Destination Trib System) terminated by a transparent demultiplexer (50) and second end (Originating Trib System) terminated by a transparent multiplexer (40), wherein:

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The transparent demultiplexer (50) comprising:

- a) an input for receiving a supercarrier signal (OC-192) transported using a first protocol (*optical*);
- b) a plurality of outputs (81-84) for transmitting a plurality of trib signals (STS-48s) using a second protocol (*electrical*);
- c) means for demultiplexing (85) said supercarrier signal (OC-192) into said trib signals (STS-48s); and
- d) means for extracting (80, 86, 88 and 90) messaging information (TOH), required to maintain said first protocol (*optical*), from the supercarrier signal (OC-192) and inserting (80) said messaging information (TOH) into the trib signals (STS-48s) (see *col. 12, line 62 to col. 13, line 22*); and

The transparent multiplexer (40) comprising:

- e) an output (71) for transmitting a supercarrier signal (OC-192) using a first protocol (*optical*);
- f) a plurality of inputs (61-64) for receiving a plurality of trib signals (STS-48s) transported using a second protocol (*electrical*);
- g) means for multiplexing (65) said trib signals (STS-48s) into said supercarrier signals (OC-192); and
- h) means for extracting (60) messaging information (TOH) from the trib signals (STS-48s) and using (66) said messaging information (TOH) to maintain said first protocol (*electrical*) (see *col. 9, line 41 to col. 11, line 60*).

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Regarding **claim 13**, in addition to features recited in base claim 12 (see rationales pertaining the rejection of base claim 12 discussed above), the claim further calls for wherein the network span (40, 30 and 50) includes a transparent multiplexer (40) and a transparent demultiplexer (50) at each end (see FIG. 6).

Regarding **claim 14**, in addition to features recited in base claim 12 (see rationales pertaining the rejection of base claim 12 discussed above), the claim further calls for wherein the plurality of low bit rate network sections (51-58) provide parallel communications paths (see FIG. 6).

Regarding **claim 15**, in according to FIG. 6 and col. 9, line 23 to col. 15, line 19, Martin shows an optical communication network (FIG. 6) arranged to support, using a first protocol (optical), the carriage of a supercarrier signal (OC-192) including messaging information (TOH) through the optical communication network (FIG. 6), the optical communication network including:

a network span (40, 30 and 50) comprising at least one low bit rate network section (51, 53, 55 and 57 or 52, 54, 56 and 58) for transporting a plurality of trib signals (STS-48s) using a second protocol (electrical);

a transparent demultiplexer (50) connected to said network span for demultiplexing said supercarrier signal (OC-192) into said trib signals (STS-48) (see col. 13, lines 13-22); and

wherein said demultiplexer (50) includes means for inserting (80) into said plurality of trib signals (STS-48s) the messaging information (TOH) required to maintain said first protocol (electrical) (see col. 12, line 62 to col. 13, line 12).

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Regarding **claim 16**, in addition to features recited in base claim 15 (see rationales pertaining the rejection of base claim 15 discussed above), the claim further calls for wherein the optical communication system is in the form of a loop (see *FIG. 2* and *col. 6, lines 1-7*, *Martin* shows fiber optic networks involving sites 10 and 20 having loops 100 and 110; and *FIG. 4A* and *col. 6, line 66* to *col. 7, line 2*, *Martin* shows the configuration according to the invention where the four fiber spans 22-25 shown in *FIG. 2* between two sites 10 and 20 are replaced by a high rate span 30a and 30b).

Regarding **claim 17**, in addition to features recited in base claim 15 (see rationales pertaining the rejection of base claim 15 discussed above), the claim further calls for wherein the network span (40, 30 and 50) comprising a plurality of low bit rate network sections (51-58) providing parallel communication paths (51-58) across the network span (see *FIG. 6*).

Regarding **claim 18**, in according to *FIG. 6* and *col. 9, line 23* to *col. 15, line 19*, *Martin* shows a transparent demultiplexer (50) comprising:

- an input for receiving a supercarrier signal (OC-192) transported using a first protocol (*optical*);

- a plurality of outputs (81-84) for transmitting a plurality of trib signals (STS-48s) using a second protocol (*electrical*);

- means for demultiplexing (85) said supercarrier signal (OC-192) into said trib signals (STS-48s); and

- an overhead processor for extracting (80, 86, 88 and 90) messaging information (TOH), required to recreate the supercarrier signal from the trib signals after

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transmission, according to said first protocol (optical), from the supercarrier signal (OC-192) and inserting (80) said messaging information (TOH) into the trib signals (STS-48s) (*see col. 12, line 62 to col. 13, line 22*); and

Regarding **claim 19**, in according to FIG. 6 and col. 9, line 23 to col. 15, line 19, Martin shows a transparent multiplexer (40) comprising:

an output (71) for transmitting a supercarrier signal (OC-192) using a first protocol (optical);

a plurality of inputs (61-64) for receiving a plurality of trib signals (STS-48s) transported using a second protocol (electrical);

means for multiplexing (65) said trib signals (STS-48s) into said supercarrier signals (OC-192); and

an overhead processor for extracting (60) messaging information (TOH) from the trib signals (STS-48s) and using (66) said messaging information (TOH) to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol (electrical) (*see col. 9, line 41 to col. 11, line 60*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

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Martin in view of Martin et al (USP 6,205,158) (hereinafter "Martin2").

Regarding **claim 1**, in according to FIG. 6, block 50 and col. 9, line 23 to col. 15, line 19, Martin discloses a method of transporting a supercarrier signal (*supercarrier OC-192; col. 12, line 50*) over a network span (*52, 54, 56 and 58*), the method comprising the steps of: transmitting said supercarrier signal (*OC-192*), including messaging information (*TOH; col. 12, line 58*), using a first protocol (*optical; OC-192*) (*note: col. 12, line 54-56; SC input Port 91 and SC ROH Processor reads on the claimed limitation set forth*); transparently demultiplexing (*STS-1 Manger 85*) said supercarrier signal (*OC-192*) into a plurality of trib signals (*STS-48s; col. 13, line 21*) (*note: col. 13, lines 13-19; STS-1 manger 85 reads on the claimed limitation set forth*);

transmitting said trib signals (*STS-48s*) over said network span (*52, 54, 56 and 58*) using a second protocol (*electrical; STS-48*) (*note: col. 13, lines 19-26; Trib Output Ports read on the claimed limitation set forth*); whereby the messaging information (*TOH*) required to maintain said first protocol is included in said trib signals (*STS-48*) (*note: col. 7, lines 48-60 and col. 12, line 62 to col. 13, line 3*). Martin fails to explicitly further disclose the claimed limitation of "*after the transmission over the network span, transparently remultiplexing the trib signals into the supercarrier signal including the messaging information*". However, such limitation lacks thereof from Martin reference is well known and disclosed by Martin2.

In accordance with Martin2 reference entirety, Martin2 provides various architectures for upgrading telecommunication network using transparent transport capabilities, comprising, among other things, the limitation of "*after the transmission*

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over the network span, transparently remultiplexing the trib signals into the supercarrier signal including the messaging information" (see '158, Figure 9, thereafter and col. 9, line 63 to col. 10, line 15, Martin2 shows the claimed configuration) to upgrade telecommunication networks without having to replace the equipment of the existing tributary system (see '158, col. 3, lines 29-32).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to incorporate Martin2' architectures into Martin's teaching to arrive the claimed invention with a motivation to upgrade telecommunication networks without having to replace the equipment of the existing tributary system (see '158, col. 3, lines 29-32).

Regarding **claim 2**, in addition to features in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), Martin in view of Martin2 further teaches wherein the messaging information (*TOH*) is used to transparently multiplex (40) the trib signals (*STS-48 signals at 61-64*) into the supercarrier signal (*OC-192*) (*note: '038, FIG. 6, col. 9, line 41 to col. 12, line 53; SC TOH Processor 66 and SC Output Port 71 read on the claimed limitation set forth*).

Regarding **claim 3**, in addition to features in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), Martin in view of Martin2 further teaches wherein each trib signal (*STS-48*) is multiplexed from a plurality of basic signals (*STS-1s*) (*note: '038, at col. 13, lines 19-21, Martin discloses each trib output port 81-84 is responsible for receiving the outgoing STS-1s from block 85, multiplexing the STS-1s into an output STS-48*).

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Regarding **claim 4**, in addition to features in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), Martin in view of Martin2 further teaches wherein the messaging information (*TOH*) includes both essential messaging information (*APS bytes K1 and K2; col. 7, lines 55-60*) and desirable messaging information (*E1, E2, F1 and M1; col. 13, lines 27-56*) (*note: '038, at col. 13, lines 21-22, Martin discloses trib TOH received from block 80 is added into STS-48*).

Regarding **claim 5**, in according to FIG. 6 and col. 9, line 23 to col. 15, line 19, Martin shows an apparatus (*Tmux 40 or 50*) for transporting a supercarrier signal (*OC-192*) including messaging information (*TOH*), using a first protocol (*optical; OC-192*); over a network span (*52, 54, 56 and 58*) comprising a plurality of low bit rate network section (*61, 62, 63, 64, 81, 82, 83 and 84*) for transporting a plurality of trib signals (*STS-48s; col. 13, line 21*) using a second protocol (*electrical; STS-48*); the apparatus having: a transparent demultiplexer (*Tmux 50*) coupled receive said supercarrier signal and demultiplex said supercarrier (*OC-192*) into said trib signals (*STS-48s*) for transmission over said network span (*note: col. 13, lines 13-19; STS-1 manger 85 reads on the claimed limitation set forth*); wherein said demultiplexer (*Tmux 50*) includes means for inserting (*80, 88 and 90*) into said plurality of trib signals (*STS-48*) the messaging information (*TOH*) required to maintain said first protocol (*optical*) (*see col. 12, line 62 to col. 13, line 12 and col. 13, lines 21-22*). Martin fails to further discloses the claimed limitation of "a multiplexer connected between said network span and said network, for transparently remultiplexing the trib signals into the supercarrier signals

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including the message information. However such limitation lacks thereof from Martin reference is well known and disclosed by Martin2.

In accordance with Martin2 reference entirety, Martin2 provides various architectures for upgrading telecommunication network using transparent transport capabilities, comprising, among other things, the limitation of "*after the transmission over the network span, transparently remultiplexing the trib signals into the supercarrier signal including the messaging information*" (see '158, Figure 9, thereafter and col. 9, line 63 to col. 10, line 15, Martin2 shows the claimed configuration) to upgrade telecommunication networks without having to replace the equipment of the existing tributary system (see '158, col. 3, lines 29-32).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to incorporate Martin2' architectures into Martin's teaching to arrive the claimed invention with a motivation to upgrade telecommunication networks without having to replace the equipment of the existing tributary system (see '158, col. 3, lines 29-32).

Regarding **claim 7**, in addition to features in base claim 5 (*see rationales pertaining the rejection of base claim 5 discussed above*), the claim further calls for wherein the information required to maintain the first protocol is extracted from the trib signals (*see col. 9, line 41 to col. 11, line 60*).

Regarding **claim 8**, in addition to features in base claim 5 (*see rationales pertaining the rejection of base claim 5 discussed above*), Martin in view of Martin2 further teaches the trib signal may pass in both directions along the network span

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(inherent; FIG. 6 shows trib signals flow from Originating Trib System (40) along path 30 to Destination Trib System (50). However, at col. 9, lines 9, lines 28-29, Martin discloses T-Mux pair 40, 50 operates similarly for the reverse traffic. Thus, it is inherent that trib signals may pass in both directions along the network span as claimed).

4. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin.

Regarding **claims 20-21**, the claims call for software for performing the functions of claimed inventions 18-19. Martin fails to disclose the software for performing the functions of claimed inventions 18-19. However, coding a computer program from the system or method taught by Martin is well known, contemplated by those skilled in the art to provide an automated transparent transport system.

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to translate the functions of the elements taught by Martin as discussed in the rejection of claims 19-20 into a computer software to arrive the claimed invention with a motivation to provide an automated transparent transport system.

Response to Arguments

5. Applicant's arguments filed 8/8/03 have been fully considered but they are not persuasive. Applicants' arguments will be addressed hereinbelow in the order in which they appear in the response dated 8/8/03.

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In the Remarks of the outstanding response, on page 2, pertaining the rejection of claims 10-19, Applicants allege *"The distinctive features of claim 10 not shown in Martin are"*

"means for extracting messaging information, required to create the supercarrier signal from the trib signals after transmission, according to said first protocol, from the supercarrier signal and inserting said messaging information into the trib signals."

The closest that Martin seems to show is extracting "TMux Msg bytes" and generating or passing through the remaining trib TOH. However, this is not messaging information required to recreate the supercarrier signal, it is only messaging information for the trib signal, and is not sufficient to recreate the supercarrier signal. Since the present claims are concerned with transparent demultiplexing to maintain a higher rate protocol over a lower rate span, the messaging information is different. It is the messaging information of the higher rate protocol, the supercarrier, which is passed through transparently, not the messaging information of the lower rate protocol."

In response Examiner respectfully disagrees and asserts the Transport Overhead (TOH) as clearly pointed out in the Office Action corresponding to the claimed limitation of *"messaging information, required to recreate the supercarrier signal from the trib signals after transmission"*. Applicants should revisit Martin reference at col. 4, lines 29-35 and thereafter for a better description of "transport overhead". As for the argument of *"Since the present claims are concerned with transparent demultiplexing to maintain a higher rate protocol over a lower rate span, the messaging information is different. It is the messaging information of the higher rate protocol, the supercarrier, which is*

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*passed through transparently, not the messaging information of the lower rate protocol", a careful review claims 10-19 Examiner find no such language in the claims. Perhaps Applicants refer to certain features that are disclosed in the present application but not recited in the rejected claims in making the contention that the Martin reference fails to show certain feature of Applicants' invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).*

Also in the Remarks, on page 2 continues to page 3, pertaining the rejection of claims 1-5, 7-8 and 20-21, Applicants argue *"The critical point of this rejection seems to be the assertion that Martin2 shows the feature of claim 1 of "transparently remultiplexing the trib signals into the supercarrier signal". Just like Martin, Martin2 does show multiplexing tribs into a supercarrier, followed by demultiplexing at a far end to recover the original tribs. However nowhere in the text, figures or claims is there any hint of doing the opposite, that is taking a supercarrier, demultiplexing it into tribs, then remultiplexing at the far end to recreate the supercarrier as claimed in claim 1".*

In response Examiner respectfully disagrees and asserts the Martin in view of Martin2 references do indeed teach the claimed invention. As clearly pointed out in the Office Action, Martin reference does disclose the details of transparent multiplexer/demultiplexer (TMux) (Figure 6), but fails to disclose the TMux in a ring network. On the other hands, Martin2 reference discloses the TMux in a ring network (see abstract and thereafter); thus, does remedy the drawback Martin to arrive the claim invention. Martin2, as clearly shown in Figures 9A-9C, shows the TMuxes being

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adapted for connection as ring nodes in high-speed ring; thus, contradistinction to the Applicants' argument. The Martins' TMux configured in a ring network does anticipate the claimed invention.

Examiner believes an earnest attempt has been made in addressing all of the Applicants' arguments. Due to the arguments are not persuasive and not present the application in a better condition for allowance, the rejection from last Office Action is maintained.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Frank Duong', with a horizontal line underneath the name.

Frank Duong
Examiner
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April 19, 2004